

NFCL/ENV/APPCB/MR/04/2015

9<sup>th</sup> December 2015

To,

**Member Secretary,  
A.P. Pollution Control Board,  
Paryavarana Bhavan,  
A-3, I.E., Sanath Nagar,  
Hyderabad – 500 018.**

**Subject** : Monthly Progress Report

Dear Sir,

The Monthly Progress Report for the month of November 2015 along with the necessary documents enclosed at Annexure A, Annexure B, Annexure C and Annexure D is being forwarded.

Thanking you,

Your's sincerely  
for NAGARJUNA FERTILIZERS AND CHEMICALS LIMITED

*G V S Anand*

**G V S Anand  
Senior General Manager (Operations)**

Encl.: a/a

Cc: Environmental Engineer,  
A.P. Pollution Control Board,  
2-532, Santhi Nagar,  
Ramanaih Peta,  
Kakinada.

Cc: Chairman  
MD  
Sr. Advisor

→ DGM (Lab & Env.) / Manager (Env.)

Nagarjuna Road,  
Kakinada - 533 003.  
India,  
Phone : 2360390  
Fax : 0884 - 2362084/2365020  
**CIN : L24129AP2006PLC076238**



**Nagarjuna Fertilizers  
and Chemicals Limited**

9<sup>th</sup> December 2015

NFCL/ENV/APPCCB/MR/04/2015

To,

**Member Secretary,  
A.P. Pollution Control Board,  
Paryavarana Bhavan,  
A-3, I.E., Sanath Nagar,  
Hyderabad – 500 018.**

**Subject : Monthly Progress Report**

Dear Sir,

The Monthly Progress Report for the month of November 2015 along with the necessary documents enclosed at Annexure A, Annexure B, Annexure C and Annexure D is being forwarded.

Thanking you,

Your's sincerely  
for NAGARJUNA FERTILIZERS AND CHEMICALS LIMITED

*G V S Anand*

**G V S Anand  
Senior General Manager (Operations)**

Encl.: a/a

Cc: Environmental Engineer,  
A.P. Pollution Control Board,  
2-532, Santhi Nagar,  
Ramanaiah Peta,  
Kakinada.

Regd. Off : Nagarjuna Hills, HYDERABAD - 500 082, India.

## 1.0 OVERALL REVIEW

We have received combined Air and Water Consent as well as Hazardous Waste Authorization from APPCB, Hyderabad on 09<sup>th</sup> December 2014 (Consent No. APPCB / VSP / KKD / 10300 / HO / CFO / 2014 – 602) for Plant I, II, CDR and CF Plant. The combined Consent for Operation and Hazardous Waste Authorization is valid up to 31<sup>st</sup> March 2017.

Bio Medical Waste (Management and Handling) Authorization received from APPCB, Regional Office, Kakinada and it is valid up to March 2017. BMW Annual Report (Form-II) for the year 2014 was submitted to Member Secretary, APPCB, Hyderabad on 19<sup>th</sup> January 2015.

We paid the Water Cess bill for the period November 2013 to October 2014 as per the assessment Order No. SAP/KKD/03/CESS/2014-68, dated 08/12/2014 on 2<sup>nd</sup> January 2015.

We submitted Environmental Statement (Form - V) for the year 2013-14 for Plant 1, 2 & CDR Plant on 20.08.2014 and for CF Plant on 25.09.2014 to Member Secretary, APPCB, Hyderabad. Hazardous Waste Annual Returns in the prescribed format (Form - 4) for the year 2014 - 15 were submitted to Member Secretary, APPCB, Hyderabad on 17<sup>th</sup> June 2015.

Our Automatic Ambient Air Monitoring Station – 1 hook up with APPCB server was established on 28<sup>th</sup> February 2011. As directed by CPCB, the commissioning of Ammonical Nitrogen analyzer (Treated Effluent) and SPM Analyzer (CFG Plant Stack) has been completed. Monitoring data of pH, Flow rate and Ammonical Nitrogen in our treated effluent is being communicated to APPCB on daily basis (by email). SPM monitoring data pertaining to CFG Plant Stack is being uploaded to APPCB and CPCB server.

## 2.0 ENVIRONMENT IMPACT ASSESSMENT REPORT

Final Environment Report has been submitted on July 29, 1991 vide Letter No.031/0033/NHOT/8220.

Rapid Environment Impact Assessment Study for the Plant-I and Plant-II was carried out from the month of April 1994 to July 1994 and report was submitted to the Board vide letter dated 08.08.1994. Rapid Environment Impact Assessment Study for the Conversion of Unit-II operations from Naphtha to Natural Gas, Installation of CDR Plant, De-bottlenecking of Unit-I & II was carried out from the month of December 2006 to March 2007 and report was submitted to the Board on 13.08.07.

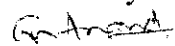
Environment Impact and Risk Assessment Report for our Proposed Fertilizer Project - 3 was carried out from the month of December-2010 to February-2011 and EIRA report was submitted to the Environmental Engineer, APPCB, R.O, Kakinada on 28.06.2011. Public Hearing was conducted by APPCB for the Environmental Clearance to our proposed Project-3 on 17<sup>th</sup> August 2011. Environmental Clearance was accorded by MoEF & CC, New Delhi for Project -3 on 18<sup>th</sup> December 2012.

## 3.0 METEOROLOGICAL MANAGEMENT

Wind velocity, wind direction, rainfall, temperature, humidity and barometric pressure are continuously monitored.

## 4.0 DISASTER MANAGEMENT

As a part of On-site Emergency Preparedness, Level-II Emergency mock drill was conducted on 26.06.2015 at about 02.45 PM in PTP Plant (Chlorine handling area), assuming chlorine leak from vapor side valve of spare Chlorine tonner. Dy. Chief Inspector of Factories, Kakinada witnessed the emergency drill.

  
**G.V.S. ANAND**  
Sr.General Manager (Operations)  
Nagarjuna Fertilizers and Chemicals Limited  
Nagarjuna Road  
KAKINADA-533 002 (A.P.)

## 5.0 RECEIPT OF CONSENT ORDER & AUTHORIZATION

We have received combined Air, Water Consents and Hazardous Waste Authorization from APPCB, Hyderabad on 09<sup>th</sup> December 2014 (Consent No. APPCB / VSP / KKD / 10300 / HO / CFO / 2014 – 602) for Plant I, II, CDR and CF Plant. The above three Consents for Operation are valid up to 31<sup>st</sup> March 2017. Received CFE from APPCB, Hyderabad for our proposed Plant-3 on 10<sup>th</sup> April 2013 and it is valid for 5 years.

## 6.0 CONDITIONS OF APPCB/CPCB

All conditions were adhered fully at the time of plant commissioning in July '92. All conditions of both APPCB and MoEF & CC were adhered to by Plant-II fully before starting commercial production on Mar 19, 1998. All systems continue to perform well within the norms. For details of conditions, please refer to our earlier reports. Five Automatic unmanned Ambient Air Monitoring Stations and the Mobile Ambient Air Monitoring Station are in working condition.

S. No.	Mile Stone/Activity	Current Status
1.0	Latest developments	Nil

Water consumption figures (including CF Plant) were submitted to APPCB for Cess for the month of November 2015 vide letter no. NFCL/ENV/APPCB/WC/04/2015, dated December 4<sup>th</sup> 2015.

Please refer enclosed annexure B&C, for details of Gaseous Effluents, Noise Levels & Ambient Air Quality during November 2015.

## 7.0 LIQUID EFFLUENTS

Effluent Treatment Plant is in continuous operation. Since 24<sup>th</sup> March 2015, Online monitoring of pH and Flow rate in our treated effluent is being communicated to APPCB on a daily basis (by email). As directed by CPCB, the commissioning of Ammonical Nitrogen analyzer (Treated Effluent) has been completed and monitoring data of Ammonical Nitrogen in our treated effluent is being communicated to APPCB on a daily basis (by email) since 29<sup>th</sup> June' 15.

We are furnishing the treated liquid effluent analysis results & quantity during November 2015 in Annexure-A.

## 8.0 SOLID & LIQUID WASTES

Raw Water turbidity was around 12 NTU (average) and the fertile sludge generated from the raw water pre treatment was used as landfill in Green Belt.

## 9.0 AIR POLLUTION

All measures for air pollution control have been incorporated both for Plant-I, Plant-II & CF Plant and they are functioning satisfactorily. PM<sub>2.5</sub> values in ambient air were 20 to 27 µg/m<sup>3</sup> during this month in our complex. SPM values in Flue Gas stacks were in the range of 7.0 to 27.3 mg/Nm<sup>3</sup>. Please refer Annexure – B & C for analysis reports.

## 10.0 GREEN BELT

No. of sapling planted = 200 Nos.  
(As mortality replacements and strengthening of Weaker areas)

No. of saplings planted to date (including mangrove Plant and mass plantation) = 4, 00,000 Nos.

  
**G.V.S. ANAND**


Sr.General Manager (Operations)  
Nagarjuna Fertilizers and Chemicals Limited  
Nagarjuna Road  
KAKINADA-530 003 (A.P.)

**LIQUID EFFLUENT ANALYSIS FOR THE MONTH OF NOVEMBER - 2015**

Annexure - A

Date	pH	Color	Temp °C	Total Suspended Solids	Total Dissolved Solids	Ammoniacal Nitrogen as N	Free Amm. as N	Nitrates as N	BOD	COD	Oil & Grease	Phosphate as P	Chloride as Cl	TKN as N	Effluent Generation m <sup>3</sup>	Raw water Consumption m <sup>3</sup>
1	7.2	Colorless	23.5			6.0	0.00	6.4			1.0	0.7	412	12.0	2378	16075
2	7.1	-do-	24.0	32	1196	7.1	0.00	6.2	9	40	1.1	0.8	395	14.0	2652	21980
3	6.9	-do-	25.0			10.5	0.00	6.4			0.9	0.7	469	21.0	3050	22010
4	7.4	-do-	25.0			11.4	0.00	6.2			0.8	0.7	416	23.0	2676	21320
5	7.7	-do-	26.0			10.4	0.00	6.4			1.1	0.9	420	21.0	3047	22520
6	7.7	-do-	24.0			10.4	0.00	6.3			0.6	0.7	426	21.0	2290	22798
7	7.8	-do-	24.5			9.9	0.00	6.5			0.7	0.8	398	20.0	2876	22046
8	7.9	-do-	26.0			9.0	0.00	6.4			0.9	0.9	362	18.0	2248	22374
9	6.9	-do-	26.0	34	1248	10.4	0.00	6.6	8	38	0.5	0.8	422	21.0	2678	21815
10	6.8	-do-	23.0			8.6	0.00	6.4			0.9	0.7	406	17.0	2167	19300
11	6.9	-do-	22.5			10.9	0.00	6.2			1.0	0.7	426	22.0	2550	20726
12	7.9	-do-	22.0			9.0	0.00	6.3			0.7	0.8	370	18.0	2490	21404
13	7.0	-do-	21.5			9.5	0.00	6.5			1.1	0.7	412	19.0	2174	21161
14	6.8	-do-	21.5			10.1	0.00	6.6			1.2	0.8	378	20.0	2644	21340
15	6.6	-do-	21.5			13.2	0.00	6.4			0.9	0.7	422	26.0	2339	21284
16	6.7	-do-	23.5	30	1190	9.0	0.00	6.3	9	36	0.6	0.8	390	18.0	2455	21550
17	6.6	-do-	20.5			11.3	0.00	6.1			0.8	0.7	378	22.0	1385	20538
18	7.3	-do-	22.5			12.8	0.00	6.2			0.9	0.8	406	26.0	2478	20029
19	7.4	-do-	22.5			13.7	0.00	6.2			0.5	0.9	412	28.0	2528	20716
20	7.8	-do-	22.0			13.0	0.00	6.0			0.9	0.7	390	26.0	2339	21114
21	7.7	-do-	22.0			11.4	0.00	6.2			1.0	0.8	418	22.0	2179	21179
22	7.0	-do-	24.0			14.6	0.00	6.4			0.7	0.9	448	30.0	2185	21065
23	7.3	-do-	23.5	32	1250	12.8	0.00	6.1	8	38	0.9	0.7	425	26.0	2640	21747
24	6.9	-do-	24.0			11.4	0.00	6.5			1.1	0.8	422	22.0	2520	21418
25	7.9	-do-	22.5			12.3	0.00	6.4			0.9	0.9	414	24.0	2584	20984
26	7.3	-do-	21.5			11.2	0.00	6.6			0.8	0.7	430	22.0	2944	21009
27	7.5	-do-	21.0			11.7	0.00	6.5			0.6	0.8	462	23.0	2317	20651
28	6.9	-do-	22.5			12.3	0.00	6.4			1.0	0.7	440	24.0	2165	21293
29	7.4	-do-	24.5			13.8	0.00	6.6			0.8	0.7	436	28.0	2440	21116
30	7.6	-do-	23.5	36	1346	10.5	0.00	6.4	9	36	0.7	0.7	478	21.0	2492	21253

Note: (1) All parameters except Temperature, Colour & pH, are expressed in mg/liter.  
 (2) The other parameters included in the CFO (monitored on a monthly basis) for the month of November'15 are:  
 Cyanide - ND, Vanadium - 0.01 mg/L, Arsenic - ND, Hexavalent Chromium - < 0.01 mg/L and  
 Total Chromium - < 0.01 mg/L.  
 Point of collection of samples is Holding Pond and outlet of Holding pond is pumped to Green Belt for irrigation.

  
**G.V.S. ANAND**  
 Sr. General Manager (Operations)  
 Nagarjuna Fertilizers and Chemicals Limited  
 Nagarjuna Road  
 KAKINADA-533 003 (A P)

## FLUE GAS ANALYSIS FOR NOVEMBER - 2015

Date	PLANT- I				PLANT- II	CFG PLANT
	Reformer stack F-(201 +202) (Against Chimney No. 20)	HRSG A (Chimney No. 4)	HRSG B (Chimney No. 5)	Boiler Stack (Chimney No. 3)	HRSG C (Chimney No. 14)	CFG Stack (Chimney No. 21)
	SPM (mg/Nm <sup>3</sup> )	SPM (mg/Nm <sup>3</sup> )	SPM (mg/Nm <sup>3</sup> )	SPM (mg/Nm <sup>3</sup> )	SPM (mg/Nm <sup>3</sup> )	SPM (mg/Nm <sup>3</sup> )
04.11.15	12.0	9.0	10.0	8.0	12.0	16.9
11.11.15	13.0	Under S/D	12.0	10.0	9.0	21.6
18.11.15	11.5	Under S/D	9.0	7.0	8.0	27.3
25.11.15	10.0	Under S/D	11.0	9.0	10.0	25.4

S/D: Shut Down

## OUTSIDE AMBIENT AIR MONITORING FOR NOVEMBER - 2015

Date	Location	SO <sub>2</sub>	NO <sub>x</sub>	NH <sub>3</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
		µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>
05.11.15	KVK Training Centre(Gandhi Nagar)	10.2	11.5	7.2	71.4	24.2
05.11.15	Guest House (Shanti Nagar)	10.6	10.8	7	69.2	25.4
12.11.15	KVK Training Centre(Gandhi Nagar)	11.2	12.4	6.8	72.4	24.4
12.11.15	Guest House (Shanti Nagar)	9.9	10.4	6.2	70.2	27.2
19.11.15	KVK Training Centre(Gandhi Nagar)	11	13	7.1	74	25.8
19.11.15	Guest House (Shanti Nagar)	9.2	12.2	6.4	76.6	22.6
26.11.15	KVK Training Centre(Gandhi Nagar)	12.2	13.6	6.8	72.8	27.1
26.11.15	Guest House (Shanti Nagar)	10	11.2	6.4	72.1	24.2
12.11.15	Near Coringa	5.2	10.2	3.6	46.2	12.1
26.11.15	Godarigunta	10.8	11.6	7.6	68.6	23.8
05.11.15	Akshara School	5.8	6.9	6.2	60.8	20.8

## UREA PRILL TOWER DUST ANALYSIS FOR NOVEMBER - 2015

Plant	Date	Dust		Plant	Date	Dusts	
		mg/Nm <sup>3</sup>	Kg/MT			mg/Nm <sup>3</sup>	Kg/MT
I (Chimney No. 6)	03.11.15	26.4	0.215	II (Chimney No. 15)	03.11.15	21.3	0.166
	10.11.15	24.2	0.233		10.11.15	19.5	0.185
	17.11.15	21.7	0.233		17.11.15	20.9	0.151
	24.11.15	20.5	0.223		24.11.15	17.7	0.130

G.V.S. ANAND

Sr.General Manager (Operations)  
Nagarjuna Fertilizers and Chemicals Limited  
Nagarjuna Road  
KAKINADA-533 003 (A P)

## NOISE LEVELS FOR NOVEMBER – 2015

Location	DESCRIPTION	Sound Level dB(A)	
		Day time ( limit 75)	Night time (limit 70)
1	Gate house (North West side)	54.8	52.6
2	North East corner (Behind ETP)	48.7	48.0
3	South East corner (Security East gate)	55.2	55.0
4	Rail gate, boundary wall (South West side)	54.3	53.0

*G. Anand***G.V.S. ANAND**

Sr. General Manager (Operations)  
Nagarjuna Fertilizers and Chemicals Limited  
Nagarjuna Road  
KAKINADA-533 003 (A.P)

**AMBIENT AIR MONITORING STATION NO. I**

Date	SO <sub>2</sub> µg/m <sup>3</sup>			CO mg/m <sup>3</sup>			NO <sub>x</sub> µg/m <sup>3</sup>			NH <sub>3</sub> µg/m <sup>3</sup>			PM <sub>10</sub> µg/m <sup>3</sup>		
	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg
1	0.0	21.4	8.3	0.1	0.3	0.2	1.6	1.6	1.6	3.6	4.0	3.7	2.9	14.0	8.1
2	0.0	16.9	8.5	0.1	0.3	0.2	1.6	2.0	1.6	3.6	3.9	3.7	2.4	19.1	8.9
3	0.0	29.9	6.9	0.1	0.2	0.2	1.6	8.7	5.3	3.6	3.9	3.8	4.1	23.5	11.7
4	0.0	14.7	6.9	0.1	0.2	0.2	4.5	6.7	5.3	3.7	13.8	5.8	6.9	20.0	12.1
5	0.0	23.5	8.6	0.1	0.2	0.2	3.9	6.9	5.1	3.7	3.8	3.8	13.3	44.5	22.0
6	0.0	21.3	7.1	0.1	0.3	0.2	4.0	7.0	4.8	3.7	3.8	3.7	0.0	52.2	23.8
7	0.0	21.5	10.0	0.1	0.2	0.2	3.6	6.4	4.7	3.7	3.8	3.8	26.5	58.1	39.6
8	0.0	25.3	8.2	0.1	0.3	0.2	3.8	7.5	4.7	3.8	3.8	3.8	43.3	67.3	58.4
9	0.0	20.4	8.7	0.2	0.2	0.2	3.8	6.0	4.6	3.7	3.8	3.8	39.2	79.5	65.3
10	0.0	29.5	7.5	0.1	0.3	0.2	3.8	6.5	4.6	3.7	3.8	3.8	43.5	92.3	65.5
11	0.0	16.4	8.4	0.1	0.3	0.2	3.8	6.6	5.1	3.7	3.8	3.8	44.8	75.0	61.4
12	0.0	24.3	10.6	0.1	0.3	0.2	1.6	5.7	3.5	3.6	3.8	3.7	43.4	86.3	70.7
13	0.0	22.0	9.5	0.1	0.3	0.2	3.8	5.7	4.7	3.7	3.8	3.8	47.5	120.0	75.6
14	0.0	24.3	8.2	0.2	0.3	0.2	3.9	5.7	4.8	3.8	3.9	3.8	58.6	86.0	67.6
15	0.0	17.7	8.0	0.2	0.3	0.2	3.6	5.4	4.3	3.7	3.9	3.8	55.3	85.1	69.8
16	0.0	22.8	6.0	0.1	0.3	0.2	4.2	7.6	5.0	3.7	38.8	5.2	32.2	89.5	58.0
17	0.0	20.5	7.3	0.1	0.2	0.2	3.2	7.2	4.8	3.7	3.9	3.8	13.0	45.5	25.3
18	0.0	25.0	7.1	0.1	0.2	0.2	3.9	7.7	4.7	3.7	33.8	8.8	5.7	17.8	12.1
19	0.0	22.7	10.3	0.1	0.2	0.2	4.1	8.8	5.7	3.7	23.8	4.6	5.5	45.5	23.3
20	0.0	18.7	6.6	0.1	0.2	0.2	4.8	7.4	5.7	3.7	3.8	3.8	3.3	38.2	25.3
21	0.0	60.1	10.9	0.1	0.3	0.2	5.0	8.4	5.9	3.7	23.8	5.5	24.2	40.8	33.5
22	0.0	15.3	5.8	0.2	0.3	0.2	4.5	6.9	5.5	3.8	3.9	3.8	20.0	42.7	30.9
23	0.0	29.8	8.7	0.1	0.3	0.2	4.2	6.5	5.2	3.8	3.8	3.8	17.7	38.4	24.8
24	0.0	28.9	7.8	0.1	0.3	0.2	4.3	6.0	5.2	2.7	3.8	3.8	13.8	60.2	27.7
25	0.0	20.8	8.1	0.1	0.3	0.2	3.9	5.8	4.7	3.7	3.8	3.8	17.4	27.2	22.9
26	0.0	25.8	9.3	0.1	0.2	0.2	4.2	5.4	4.7	3.7	3.9	3.8	13.5	37.4	27.5
27	0.0	20.8	6.7	0.1	0.3	0.2	4.0	5.5	4.7	3.7	3.9	3.8	15.7	37.0	25.6
28	0.0	28.7	8.7	0.2	0.3	0.2	4.1	7.1	4.9	3.8	3.8	3.8	20.6	42.9	29.9
29	0.0	17.6	6.9	0.2	0.3	0.2	3.3	6.4	4.6	3.8	3.9	3.8	20.9	33.7	27.7
30	0.0	79.3	10.5	0.1	0.2	0.1	0.3	4.8	4.1	3.7	3.9	3.8	16.5	34.1	25.9

\* Under Maintenance

*G. V. S. Anand*  
**G.V.S. ANAND**

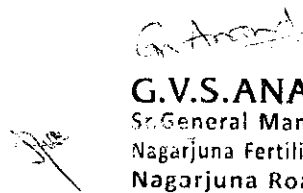
Sr.General Manager (Operations)  
Nagarjuna Fertilizers and Chemicals Limited  
Nagarjuna Road  
KAKINADA-533 003 (A P)



**AMBIENT AIR MONITORING STATION NO. II**

Date	SO <sub>2</sub> µg/m <sup>3</sup>			CO mg/m <sup>3</sup>			NO <sub>x</sub> µg/m <sup>3</sup>			NH <sub>3</sub> µg/m <sup>3</sup>			PM <sub>10</sub> µg/m <sup>3</sup>		
	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg
1	2.3	18.9	9.2	0.2	0.5	0.3	2.1	14.1	9.5	3.8	15.2	10.2	15.8	80.8	68.3
2	1.9	16.6	10.7	0.1	0.5	0.3	2.8	16.4	12.2	2.9	29.5	12.5	12.5	82.9	22.8
3	1.8	21.3	9.6	*	*	*	2.2	15.5	10.9	2.6	22.1	11.1	10.5	87.3	30.7
4	2.4	20.5	11.4	*	*	*	2.0	21.3	12.3	1.2	24.6	14.9	19.3	87.7	43.1
5	1.9	19.2	13.0	*	*	*	2.5	16.8	10.6	1.9	18.8	8.6	24.7	79.1	53.5
6	2.6	15.8	7.8	*	*	*	1.6	14.2	9.2	2.2	22.5	9.7	26.1	70.8	48.8
7	1.3	17.1	6.0	0.1	0.5	0.2	2.9	18.3	8.7	2.4	25.7	11.3	22.5	69.7	45.1
8	1.5	14.7	8.1	0.1	0.4	0.3	3.0	17.6	8.0	2.3	28.2	12.5	26.9	68.2	57.8
9	1.7	18.6	12.9	0.1	0.6	0.5	2.1	15.9	9.5	1.1	12.8	3.1	15.4	73.9	57.6
10	1.4	10.9	5.5	0.2	0.5	0.4	1.3	12.7	9.4	3.5	16.3	8.3	10.8	74.4	58.4
11	0.9	9.8	4.6	0.2	0.5	0.3	1.8	15.5	6.9	6.2	29.9	15.5	12.6	62.0	56.6
12	1.2	13.6	4.3	0.2	0.4	0.3	2.0	23.9	13.5	5.8	22.1	10.4	20.3	65.7	53.9
13	2.1	16.9	7.4	0.1	0.5	0.4	3.6	28.4	12.7	4.6	25.4	13.9	17.2	78.1	65.8
14	1.9	21.4	11.2	0.1	0.4	0.2	2.8	22.3	13.1	3.9	22.6	10.6	21.5	75.3	68.1
15	2.2	20.3	10.8	0.1	0.3	0.2	1.0	16.6	9.2	2.7	14.8	8.9	22.9	89.8	70.4
16	0.6	7.8	2.7	0.0	0.2	0.1	2.1	20.5	14.0	5.2	17.2	9.2	21.4	78.6	68.3
17	2.3	16.1	7.5	0.1	0.3	0.2	1.4	15.1	8.6	1.8	16.1	4.7	21.3	72.3	62.9
18	1.9	21.2	11.0	0.0	0.2	0.1	1.2	13.8	9.4	2.0	19.5	9.1	19.2	78.4	66.7
19	2.1	16.9	9.1	0.1	0.3	0.2	1.7	12.7	8.5	3.2	15.7	8.4	20.6	74.2	68.5
20	1.8	21.5	13.0	0.0	0.2	0.1	1.3	18.6	7.1	2.1	24.6	10.2	10.8	75.8	61.1
21	2.2	20.3	10.5	0.1	0.3	0.2	0.8	16.5	9.2	3.0	20.1	11.8	18.2	62.3	41.3
22	0.6	7.0	2.7	0.1	0.2	0.1	1.4	9.2	6.8	4.0	24.8	10.5	20.1	68.5	46.8
23	1.9	5.7	3.8	0.2	0.3	0.2	0.6	15.9	8.5	5.5	9.6	7.6	17.5	73.1	69.5
24	0.5	9.9	6.6	0.0	0.2	0.1	0.2	12.3	6.2	2.9	18.3	11.2	15.8	62.8	41.6
25	1.8	13.6	7.4	0.1	0.2	0.1	1.3	16.7	7.9	3.5	21.2	10.9	18.3	89.3	70.2
26	2.1	8.5	5.5	0.0	0.3	0.2	0.7	10.3	2.4	2.4	23.4	11.1	20.4	76.9	69.8
27	1.7	12.3	8.4	0.2	0.4	0.3	1.3	28.1	12.7	2.0	19.3	10.4	17.2	76.3	62.1
28	0.4	8.1	3.9	0.0	0.2	0.1	1.6	12.8	7.9	0.8	10.8	7.7	18.6	70.0	68.3
29	1.2	14.8	7.4	0.0	0.1	0.1	1.8	15.6	7.8	2.5	24.2	10.2	16.3	81.6	58.4
30	1.1	7.4	4.1	0.0	0.3	0.2	0.9	10.5	5.2	3.1	20.6	9.8	19.5	68.8	45.6

\* Under Maintenance

  
**G.V.S. ANAND**  
 Sr. General Manager (Operations)  
 Nagarjuna Fertilizers and Chemicals Limited  
 Nagarjuna Road  
 KAKINADA-533 003 (A.P)

**AMBIENT AIR MONITORING STATION NO. III**

Date	SO <sub>2</sub> µg/m <sup>3</sup>			CO mg/m <sup>3</sup>			NO <sub>x</sub> µg/m <sup>3</sup>			NH <sub>3</sub> µg/m <sup>3</sup>			PM <sub>10</sub> µg/m <sup>3</sup>		
	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg
1	1.2	16.7	9.6	0.0	0.5	0.1	1.3	18.6	6.4	2.0	19.3	8.4	16.9	67.0	31.4
2	1.4	15.2	7.2	0.1	0.3	0.2	1.9	12.8	7.9	0.8	10.8	3.7	15.3	68.5	40.5
3	1.5	12.6	8.4	0.1	0.3	0.2	0.6	14.9	8.1	1.5	22.9	6.3	12.0	72.4	61.0
4	2.0	14.4	7.3	0.1	0.3	0.2	1.2	12.1	8.0	1.2	10.6	5.2	16.4	71.7	60.7
5	1.3	17.3	10.9	0.1	0.4	0.2	0.8	11.3	6.4	3.1	18.5	13.6	14.5	62.8	41.2
6	2.6	16.1	11.8	0.0	0.3	0.1	1.0	21.6	7.7	1.9	12.2	6.0	18.8	56.2	45.9
7	0.9	11.7	2.0	0.0	0.2	0.1	2.1	14.0	7.6	3.3	13.8	8.4	12.6	60.5	57.3
8	2.2	12.3	9.7	0.1	0.5	0.1	0.8	19.4	9.5	2.7	18.6	9.6	14.3	72.3	52.6
9	2.7	15.5	6.3	0.1	0.4	0.2	1.3	12.2	7.8	3.8	21.1	8.8	9.1	57.1	15.7
10	2.8	13.1	7.1	0.1	0.3	0.2	2.0	18.7	8.3	2.6	29.4	9.5	12.2	65.4	45.2
11	1.3	14.8	9.9	0.0	0.5	0.2	1.4	14.3	6.1	3.4	16.3	8.3	16.7	79.8	59.5
12	1.4	16.6	6.8	0.1	0.3	0.2	3.5	15.6	6.8	3.1	15.9	8.9	10.5	72.3	61.0
13	1.9	12.4	5.7	0.0	0.3	0.2	1.6	16.1	10.7	2.0	21.3	7.7	*	*	*
14	1.2	10.2	7.2	0.1	0.3	0.2	1.9	17.0	7.5	4.6	20.2	8.1	*	*	*
15	0.8	7.5	1.5	0.0	0.3	0.1	1.3	15.5	8.4	3.9	16.8	9.5	*	*	*
16	1.7	6.8	4.0	0.0	0.2	0.1	2.7	14.9	9.2	2.3	22.3	8.6	*	*	*
17	1.0	8.7	5.6	0.0	0.1	0.1	2.1	15.2	4.6	1.0	20.1	7.7	21.1	65.8	47.7
18	1.5	10.4	6.7	0.1	0.3	0.2	1.8	14.8	9.2	1.4	13.6	6.9	26.8	58.6	43.6
19	1.2	14.1	7.9	0.0	0.2	0.1	1.5	11.3	5.9	3.1	25.2	8.3	18.3	62.5	41.5
20	0.8	16.3	8.3	0.1	0.3	0.1	0.9	18.2	3.3	1.2	13.0	2.5	20.2	68.3	56.9
21	1.5	12.5	7.8	0.0	0.2	0.1	1.2	13.5	9.6	0.8	12.9	1.4	21.4	64.1	52.8
22	2.4	13.9	9.1	0.0	0.2	0.1	0.7	18.9	7.1	2.0	13.3	6.9	10.6	62.9	58.3
23	0.9	9.8	5.0	0.1	0.4	0.3	1.6	14.3	8.5	2.5	13.8	8.8	16.7	69.8	52.8
24	1.0	8.7	5.4	0.0	0.3	0.1	0.8	10.8	1.9	2.2	13.5	6.7	12.8	59.4	52.5
25	1.2	10.6	6.2	0.0	0.3	0.1	1.3	13.6	6.8	1.6	12.8	7.2	16.9	68.2	51.0
26	2.6	12.1	7.5	0.0	0.2	0.1	2.0	18.1	5.6	4.3	18.5	5.1	20.0	66.7	41.3
27	2.1	9.2	5.8	0.0	0.2	0.1	1.6	12.7	4.3	1.1	13.7	4.9	20.4	76.3	52.1
28	1.8	12.9	6.1	0.0	0.3	0.2	1.5	10.5	6.5	2.3	21.5	4.6	17.3	69.5	48.5
29	1.8	10.5	5.3	0.0	0.4	0.1	2.0	11.9	5.2	3.0	18.2	8.4	23.5	70.1	60.3
30	2.0	14.0	7.9	0.0	0.2	0.1	6	12.2	3.1	2.2	23.6	6.8	20.1	73.5	52.4

\* Under Maintenance

*G.V.S. Anand*  
**G.V.S. ANAND**

Sr. General Manager (Operations)  
Nagarjuna Fertilizers and Chemicals Limited  
Nagarjuna Road  
KAKINADA-533 003 (A.P.)

**AMBIENT AIR MONITORING STATION NO. IV**

Date	SO <sub>2</sub> µg/m <sup>3</sup>			CO mg/m <sup>3</sup>			NO <sub>x</sub> µg/m <sup>3</sup>			NH <sub>3</sub> µg/m <sup>3</sup>			PM <sub>10</sub> µg/m <sup>3</sup>		
	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg
1	2.0	15.8	9.5	0.1	0.5	0.2	2.9	20.8	11.6	2.3	18.2	10.0	20.2	70.8	60.4
2	2.2	16.1	7.7	0.1	0.6	0.1	3.4	25.5	13.1	1.6	21.7	6.9	20.7	83.5	68.2
3	2.4	17.3	11.0	0.1	0.4	0.2	2.5	14.1	8.5	2.4	20.1	8.6	25.4	74.2	63.0
4	1.8	22.8	12.8	0.1	0.6	0.2	1.8	13.6	6.8	2.1	26.8	4.2	25.9	70.6	64.5
5	1.2	20.5	10.2	0.1	0.4	0.3	1.2	18.8	10.4	3.4	22.5	8.4	20.2	69.5	50.2
6	1.6	15.4	9.2	0.2	0.5	0.3	2.7	15.6	8.2	2.9	20.2	6.8	15.8	73.3	53.8
7	1.5	19.2	7.4	0.2	0.7	0.6	2.3	10.2	5.7	2.6	12.6	7.3	22.6	80.6	69.9
8	2.0	15.9	9.5	0.2	0.5	0.3	1.2	8.6	2.8	1.1	8.9	1.9	20.0	80.4	59.5
9	2.1	18.0	10.4	0.0	0.3	0.2	3.1	14.4	9.5	3.6	28.1	11.7	18.4	69.2	27.2
10	2.3	11.5	5.6	0.1	0.3	0.2	1.9	18.5	7.1	2.4	24.5	9.8	21.1	79.1	60.1
11	3.6	21.3	10.7	0.1	0.2	0.1	2.6	11.4	4.7	3.1	15.4	8.5	25.3	76.2	62.7
12	2.2	19.1	8.2	0.1	0.2	0.2	3.2	15.5	5.6	2.7	19.3	11.2	16.9	71.8	63.6
13	2.8	22.7	9.4	0.1	0.4	0.2	4.0	12.9	8.2	3.8	23.8	12.8	11.8	83.5	75.4
14	1.2	16.5	7.6	0.1	0.3	0.2	3.7	25.8	12.6	3.6	18.9	4.4	16.7	82.9	89.3
15	1.9	20.4	10.8	0.0	0.3	0.2	2.2	17.2	11.7	2.3	35.6	10.1	20.3	80.3	65.8
16	1.8	18.2	9.7	0.2	0.5	0.2	3.1	13.1	5.0	2.8	25.7	5.6	12.5	74.1	69.1
17	1.5	10.9	7.5	0.1	0.6	0.2	3.5	15.9	8.8	3.2	22.0	10.4	13.0	78.2	66.0
18	1.0	8.8	2.6	0.2	0.5	0.3	2.8	18.5	9.3	2.7	23.5	9.8	19.1	75.6	63.5
19	1.2	10.1	7.8	0.1	0.5	0.2	2.9	15.6	5.9	3.3	20.2	6.1	13.7	79.0	65.2
20	1.7	15.3	6.9	0.2	0.6	0.3	2.2	11.8	7.1	2.9	29.3	10.5	28.9	71.7	68.8
21	*	*	*	0.2	0.5	0.3	2.5	19.5	6.4	3.5	20.9	14.9	14.0	82.4	67.2
22	*	*	*	0.1	0.6	0.2	2.8	25.4	12.3	3.9	28.8	6.7	31.8	73.1	67.4
23	*	*	*	0.1	0.5	0.2	2.3	15.9	10.2	4.3	24.6	8.5	25.4	82.8	71.5
24	*	*	*	0.1	0.6	0.2	2.1	11.0	12.8	3.8	21.7	11.4	28.3	75.9	68.8
25	1.8	22.8	16.5	0.0	0.5	0.2	1.6	18.5	7.2	3.6	20.4	10.3	32.9	82.7	70.7
26	1.2	20.5	9.1	0.1	0.5	0.3	2.2	12.7	5.9	4.9	18.6	9.9	21.5	81.6	69.2
27	1.6	19.4	9.2	0.0	0.5	0.2	1.5	13.8	6.1	3.8	26.3	10.8	35.2	92.3	75.1
28	1.5	21.2	7.4	0.1	0.4	0.3	1.3	12.1	3.7	3.4	26.1	12.1	31.1	82.2	70.5
29	2.0	15.9	8.5	0.1	0.4	0.3	1.7	8.4	2.1	5.2	19.5	7.6	20.8	85.0	72.1
30	1.3	14.7	9.8	0.0	0.4	0.2	2.1	18.5	9.5	5.5	22.6	9.8	25.3	71.3	50.9

\* Under Maintenance

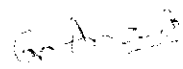
*G. Anand*

**G.V.S. ANAND**  
Sr. General Manager (Operations)  
Nagarjuna Fertilizers and Chemicals Limited  
Nagarjuna Road  
KAKINADA-533 003 (A P)

AMBIENT AIR MONITORING STATION NO. V

Date	SO <sub>2</sub> µg/m <sup>3</sup>			CO mg/m <sup>3</sup>			NO <sub>x</sub> µg/m <sup>3</sup>			NH <sub>3</sub> µg/m <sup>3</sup>			PM <sub>10</sub> µg/m <sup>3</sup>		
	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg
1	1.5	17.6	8.1	0.2	0.7	0.4	2.9	12.5	8.9	3.7	17.8	8.4	21.5	87.8	58.9
2	1.0	15.5	9.2	0.1	0.3	0.2	3.0	15.8	9.1	1.5	16.6	4.6	17.1	89.0	61.6
3	1.1	20.1	12.8	0.1	0.4	0.1	4.3	16.2	10.0	2.3	15.3	10.7	19.4	78.9	69.7
4	0.8	15.9	9.6	0.1	0.5	0.3	3.8	12.6	11.1	4.1	11.9	11.5	20.8	91.2	58.0
5	1.0	24.2	9.3	0.1	0.3	0.2	3.2	12.4	9.5	3.2	15.2	7.8	26.5	80.0	62.2
6	0.9	12.3	8.9	0.1	0.3	0.2	2.5	14.7	8.6	2.9	12.1	8.2	22.9	74.1	56.4
7	0.5	8.8	6.5	0.1	0.2	0.1	2.1	15.0	9.3	2.8	26.5	16.2	22.2	76.6	60.0
8	0.3	5.7	3.1	0.1	0.4	0.2	3.6	14.5	12.0	4.0	18.0	5.9	20.8	79.3	57.1
9	0.6	11.4	8.4	0.1	0.3	0.2	1.0	16.3	11.2	3.6	17.8	6.3	22.0	87.5	68.6
10	1.3	15.6	9.7	0.2	0.4	0.3	0.2	8.2	1.9	2.1	19.4	8.2	14.3	74.4	60.9
11	1.6	18.1	12.0	0.1	0.5	0.2	2.6	15.0	10.5	3.3	18.6	9.7	17.1	79.9	61.4
12	1.0	17.5	11.2	0.1	0.3	0.2	3.7	21.7	13.9	2.6	12.2	8.6	12.7	87.7	58.8
13	0.9	15.0	9.5	0.2	0.5	0.3	2.5	14.9	11.4	1.1	8.5	2.3	17.0	82.3	60.2
14	1.3	22.5	8.8	0.1	0.4	0.3	3.0	21.3	15.3	2.3	15.1	7.9	25.2	78.5	69.7
15	1.2	16.8	8.1	0.1	0.5	0.2	2.8	16.4	10.2	1.5	21.3	7.2	26.6	81.8	61.0
16	1.0	14.1	3.8	0.0	0.3	0.2	2.6	15.6	9.8	1.9	17.0	6.5	20.4	75.9	52.2
17	2.3	21.7	7.4	0.0	0.3	0.2	2.5	16.9	10.6	2.5	19.2	9.0	25.7	72.1	42.5
18	2.2	24.5	6.8	0.0	0.2	0.1	2.0	14.5	13.2	2.2	20.6	8.3	15.9	66.7	47.6
19	1.5	19.3	7.9	0.1	0.4	0.2	2.9	18.3	11.7	3.4	19.4	9.6	23.0	75.4	50.0
20	1.9	21.4	6.5	0.1	0.3	0.1	3.0	17.8	10.0	3.0	12.8	7.4	21.7	70.3	49.9
21	2.2	18.9	7.7	0.0	0.2	0.1	2.1	15.5	9.5	2.2	18.1	8.2	18.4	65.6	58.3
22	2.4	24.1	8.3	0.2	0.4	0.2	2.6	14.3	7.9	2.1	14.3	9.9	15.7	71.1	32.4
23	2.1	28.2	13.6	0.1	0.3	0.1	1.9	16.6	10.8	2.5	20.5	6.5	10.5	45.5	16.9
24	2.0	17.3	10.8	0.1	0.5	0.2	1.7	14.9	8.3	3.0	12.8	7.7	16.9	57.8	47.7
25	1.3	15.9	7.5	0.2	0.6	0.4	1.4	15.2	7.9	3.8	24.6	8.1	21.1	78.3	68.1
26	2.5	16.7	6.4	0.0	0.2	0.1	*	*	*	*	*	*	14.9	66.6	46.5
27	1.9	18.5	7.3	0.0	0.3	0.2	*	*	*	*	*	*	18.7	84.7	60.3
28	2.1	21.9	8.0	0.0	0.3	0.1	*	*	*	*	*	*	27.9	78.4	48.2
29	2.0	19.0	6.2	0.1	0.5	0.2	*	*	*	*	*	*	25.3	75.8	61.6
30	1.6	21.6	7.0	0.1	0.4	0.1	2.2	15.3	9.5	3.5	20.1	7.0	12.1	80.1	51.8

\* Under Maintenance

  
**G.V.S. ANAND**  
 Sr. General Manager (Operations)  
 Nagarjuna Fertilizers and Chemicals Limited  
 Nagarjuna Road  
 KAKINADA 533 002 (A.P.)